

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 02120305

Sub-watershed: Northwest Branch

Stream segment: Mainstem

Stream order: 3

Location: Woodlawn Park
Just upstream of Ednor Road
Sandy Spring, MD 20860

Coordinates: 39.127783° N -77.020894° W

Site description: The site is in a deciduous forest. Previously, the banks were highly eroded a site was restored in 2013. Bank height was reduced during restoration.

Distance from nearest road: 10 meters

Land use visible at the site: Deciduous forest, wetland, pasture

**Width of riparian buffer
(looking downstream)**

Left bank: More than 50 meters
Right bank: More than 50 meters



TRASH RATINGS

Trash rating categories: 16-20 = Optimal: Little or no human refuse visible from the stream channel
11-15 = Suboptimal: Refuse present in minor amounts (yellow)
6-10 = Marginal: Refuse present in moderate amounts (orange)
0-5 = Poor: Refuse abundant and unsightly (red)

nd several mature trees had fallen. The



or riparian zone (green)

| Date/Time | Trash Rating | Weather |
|----------------------------|-----------------|----------|
| Not monitored, spring 2011 | | |
| 4/21/2012; 9:00 | 18 | Sunny |
| 4/7/2013; 13:30 | 18 | Sunny |
| 4/5/2014; 9:00 | 20 | Sunny |
| 4/19/2015; 9:00 | No rating given | Sunny |
| 4/24/2016; 9:00 | 20 | Clear |
| 4/30/2017; 9:00 | 20 | Overcast |
| 4/28/2018; 9:00 | 20 | Overcast |

STREAM HEALTH

Issues:

2009-2018: Prior to 2013, the banks were unstable and highly eroded, with several mat
Long-term: After stream restoration in 2013, water quality is expected to remain in the

Average stream health score, 2014-2018: **3.8 (Good)** on a scale of 1.00-5.00, for the spring index period only
(using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

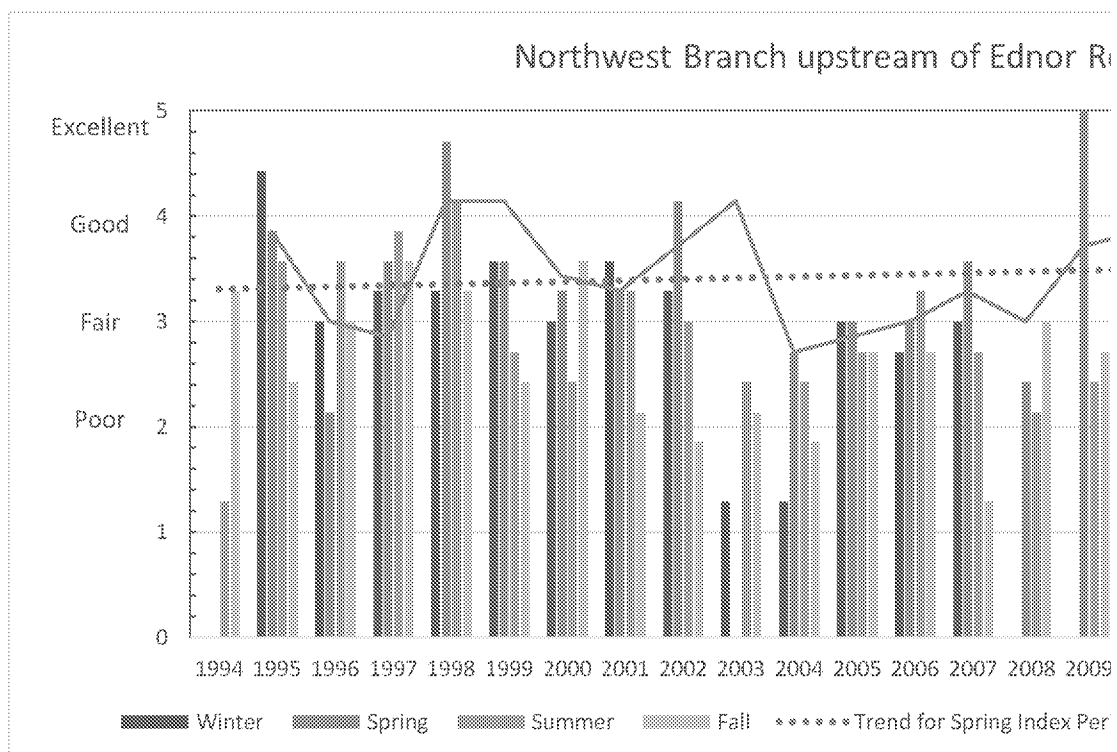


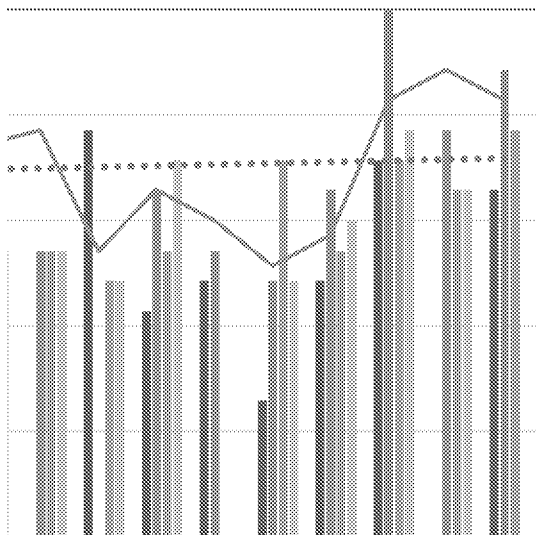
Table of BIBI Scores

Last Rain Stream Health

4/18/2012 3.29 (good)
 4/5/2013 2.71 (Fair)
 4/4/2014 2.43 (Fair)
 N/A 3.29 (good)
 4/23/2016 5.00 (Excellent)
 4/24/2017 3.86 (Good)
 4/27/2018 4.43 (Excellent)

are trees undercut and fallen. In spring 2013, the left
 good range.

oad



2010 2011 2012 2013 2014 2015 2016 2017 2018

Legend: — 2-period moving average (Spring)

| Year | | 1994 | 1995 |
|------|--------|------|------|
| | Winter | | 4.43 |
| | Spring | | 3.86 |
| | Summer | 1.29 | 3.57 |
| | Fall | 3.29 | 2.43 |

| Year | | 2002 | 2003 |
|------|--------|------|------|
| | Winter | 3.29 | 1.29 |
| | Spring | 4.14 | |
| | Summer | 3.00 | 2.43 |
| | Fall | 1.86 | 2.14 |

| Year | | 2010 | 2011 |
|------|--------|------|------|
| | Winter | | 3.86 |
| | Spring | 2.71 | |
| | Summer | 2.71 | 2.43 |
| | Fall | 2.71 | 2.43 |

| Year | | 2018 |
|------|--------|------|
| | Winter | 3.29 |
| | Spring | 4.43 |
| | Summer | 3.86 |
| | Fall | |

| 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|------|------|------|------|------|------|
| 3.00 | 3.29 | 3.29 | 3.57 | 3.00 | 3.57 |
| 2.14 | 3.57 | 4.71 | 3.57 | 3.29 | 3.29 |
| 3.57 | 3.86 | 4.14 | 2.71 | 2.43 | 3.29 |
| 3.00 | 3.57 | 3.29 | 2.43 | 3.57 | 2.14 |

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 1.29 | 3.00 | 2.71 | 3.00 | | |
| 2.71 | 3.00 | 3.00 | 3.57 | 2.43 | 5.00 |
| 2.43 | 2.71 | 3.29 | 2.71 | 2.14 | 2.43 |
| 1.86 | 2.71 | 2.71 | 1.29 | 3.00 | 2.71 |

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|------|
| 2.14 | 2.43 | 1.29 | 2.43 | 3.57 | |
| 3.29 | 2.71 | 2.43 | 3.29 | 5.00 | 3.86 |
| 2.71 | | 3.57 | 2.71 | 3.57 | 3.29 |
| 3.57 | | 2.43 | 3.00 | 3.86 | 3.29 |

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 0120305

Sub-watershed: Northwest Branch

Stream segment: Mainstem

Stream order: 4

Location: Northwest Branch Stream Valley Park, Unit 4
Along Kemp Mill Road 1/2 mile downstream of Randolph Road
Silver Spring, MD 20902

Coordinates: 39.061512° N -77.024124° W

Site description: In a wooded park adjacent to a paved footpath for pedestrians. Residential

Distance from nearest road: 200 meters

Land use visible at the site: Deciduous forest, residential

**Width of riparian buffer
(looking downstream)**

Left bank: More than 50 meters
Right bank: More than 50 meters



TRASH

Trash rating categories: 16-20 = Optimal: Little or no human refuse visible from the stream channel
11-15 = Suboptimal: Refuse present in minor amounts (yellow)
6-10 = Marginal: Refuse present in moderate amounts (orange)
0-5 = Poor: Refuse abundant and unsightly (red)

| Date/Time | Trash Rating | Weather |
|------------------|--------------|---------------|
| 4/21/2011; 17:15 | 15 | Partly cloudy |

subdivisions surround the park.



or riparian zone (green)

Last Rain Stream Health

4/18/2011 2.43 (Fair)

| | | |
|------------------|-----------------|---------------|
| 4/21/2012; 13:00 | 15 | Partly cloudy |
| 4/20/2013; 15:45 | No rating given | Partly cloudy |
| 4/21/2014; 13:30 | 11 | N/A |
| 4/18/2015; 13:30 | 16 | Sunny |
| 4/10/2016; 13:30 | No rating given | Clear |
| 4/8/2017 | No rating given | Clear |
| 4/29/2018; 9:45 | 18 | Overcast |

STREAM HEALTH

Issues:

2010-2018: reading of pH >8.0 on Bel Pre Creek at its confluence with the mainstem. S
Long-term: Water quality might improve when Bel Pre Creek upstream is restored

Average stream health score, 2014-2018:

2.6 (Fair) on a scale of 1.00-5.00, for the spring index period only
 (using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

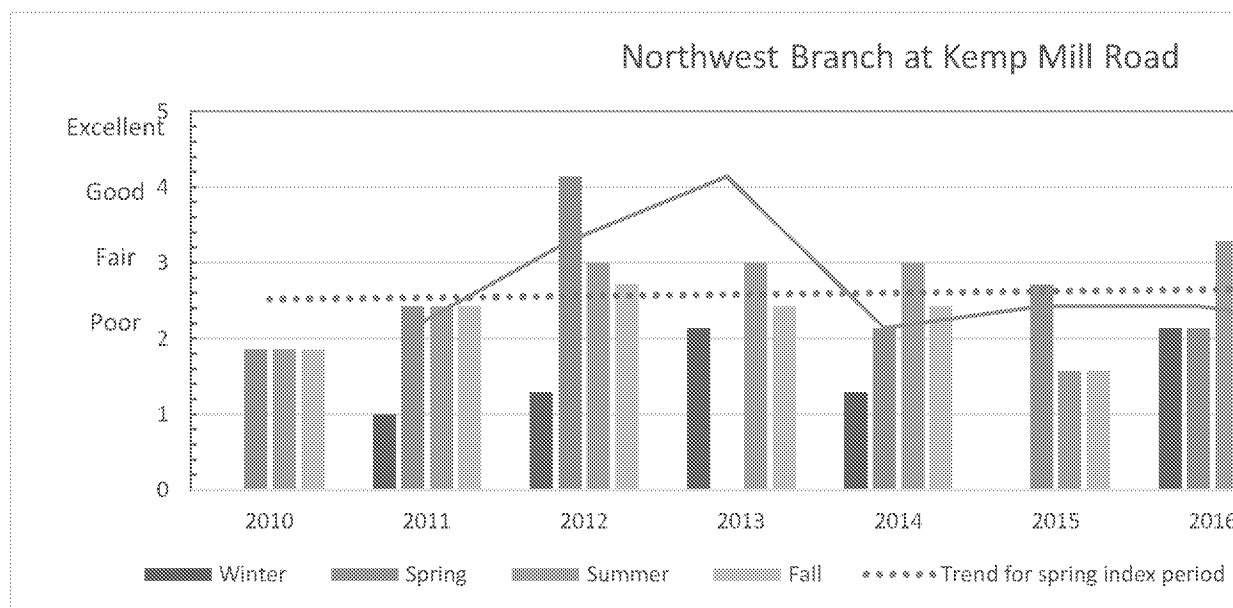
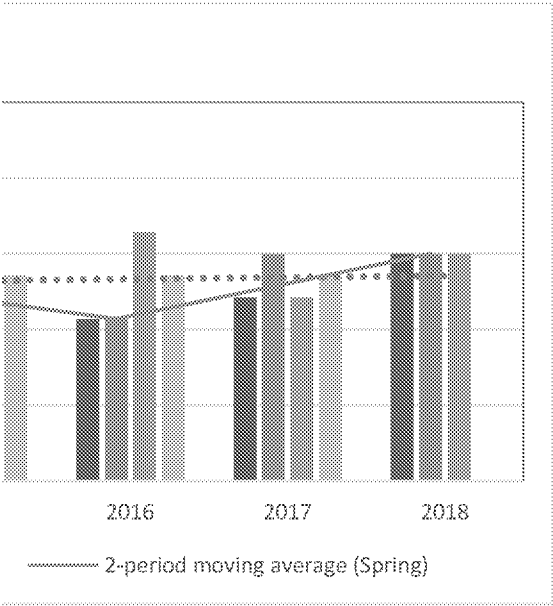


Table of BIBI Scores

| Year | 2010 | 2011 |
|--------|------|------|
| Winter | | 1.00 |
| Spring | 1.86 | 2.43 |

| | |
|-----------|-------------|
| N/A | 4.14 (Good) |
| 4/19/2013 | Not sampled |
| N/A | 2.14 (Fair) |
| N/A | 2.71 (Fair) |
| N/A | 2.14 (Fair) |
| 4/7/2017 | 3.00 (Fair) |
| 4/28/2018 | 3.00 (Fair) |

ince ANS monitoring began, our team has rated both



| 2012 | 2013 | 2014 | 2015 | 2016 |
|------|------|------|------|------|
| 1.29 | 2.14 | 1.29 | | 2.14 |
| 4.14 | | 2.14 | 2.71 | 2.14 |

| | | | |
|------|--------|------|------|
| | Summer | 1.86 | 2.43 |
| | Fall | 1.86 | 2.43 |
| Year | | 2017 | 2018 |
| | Winter | 2.43 | 3.00 |
| | Spring | 3.00 | 3.00 |
| | Summer | 2.43 | 3.00 |
| | Fall | 2.71 | |

| | | | | |
|------|------|------|------|------|
| 3.00 | 3.00 | 3.00 | 1.57 | 3.29 |
| 2.71 | 2.43 | 2.43 | 1.57 | 2.71 |

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 02120305

Sub-watershed: Northwest Branch

Stream segment: Unnamed tributary

Stream order: 1

Location: Northwest Branch Stream Valley Park, Unit 4 (Montgomery County Parks)
Downstream of Meadowbrook Drive, Silver Spring, MD 20904

Coordinates: 39.059289° N -77.010007° W

Site description: In a steeply-sloped deciduous forest downhill from a residential subdivision and Springbrook High School

Distance from nearest road: 400 meters

Land use visible at the site: Deciduous forest

Width of riparian buffer
(looking downstream)

Left bank: More than 50 meters

Right bank: More than 50 meters

TRASH

Trash rating categories: 16-20 = Optimal: Little or no human refuse visible from the stream channel or riparian area
11-15 = Suboptimal: Refuse present in minor amounts (yellow)
6-10 = Marginal: Refuse present in moderate amounts (orange)
0-5 = Poor: Refuse abundant and unsightly (red)

| Date/Time | Trash Rating | Weather | Last Rain | Stream Health |
|------------------|--------------|---------|-----------|---------------|
| 4/13/2015; 11:00 | 15 | Sunny | 4/10/2015 | 1.86 (Poor) |
| 4/14/2016; 10:30 | 20 | Sunny | 4/12/2016 | 2.43 (Fair) |
| 4/3/2017; 11:30 | 20 | Sunny | 3/31/2017 | 1.86 (Poor) |
| 4/13/2018; 10:30 | 20 | Sunny | N/A | 1.86 (Poor) |

STREAM HEALTH

Issues:

2014-2018: stream banks show patches of bare soil; marginal instream cover for fish and
Long-term: Springbrook High School could improve water quality

ian zone (gi

**Average Stream Health
Score, 2014-2018:**

2.00 (Fair) on a scale of 1.00-5.00 for the spring index period only
(using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

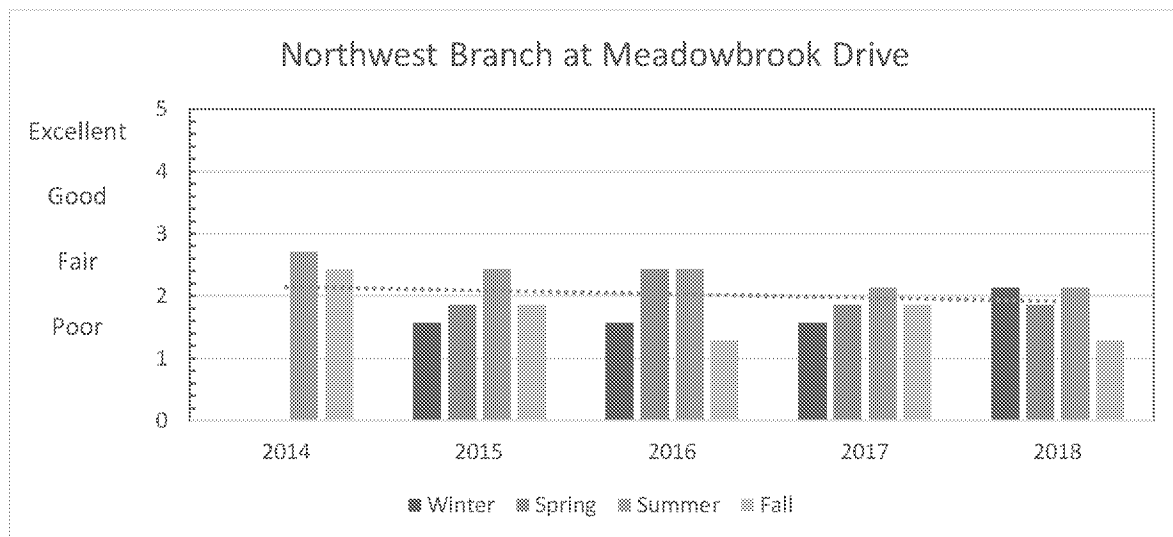


Table of BIBI Scores

| Year | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------|------|------|------|------|------|
| Winter | | 1.57 | 1.57 | 1.57 | 2.14 |
| Spring | | 1.86 | 2.43 | 1.86 | 1.86 |
| Summer | 2.71 | 2.43 | 2.43 | 2.14 | 2.14 |
| Fall | 2.43 | 1.86 | 1.29 | 1.86 | 1.29 |

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 02120305

Sub-watershed: Northwest Branch

Stream segment: Mainstem

Stream order: 2

Location: Downstream of the "Sandy Spring" and Meeting House Road,
Sandy Spring MD 20860

Coordinates: 39.135398° N -77.021201° W

Site description: In a wooded area with farmland and new housing nearby
Monitored by the First Day School of the Sandy Spring Friends Meeting

Distance from nearest road: 1000 meters

Land use visible at the site: Deciduous forest, residential, cropland

**Width of riparian buffer
(looking downstream)**

Left bank: More than 50 meters

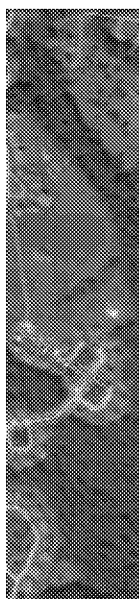
Right bank: More than 50 meters



TRASH RATINGS

Trash rating categories: 16-20 = Optimal: Little or no human refuse visible from the stream channel or r
11-15 = Suboptimal: Refuse present in minor amounts (yellow)
6-10 = Marginal: Refuse present in moderate amounts (orange)
0-5 = Poor: Refuse abundant and unsightly (red)

| Date/Time | Trash Rating | Weather | Last Rain | Stream Health |
|------------------|-----------------|---------|-----------|---------------|
| 4/17/2011; 11:01 | No rating given | Sunny | 4/16/2011 | 3.86 (Good) |
| 4/15/2012; 10:43 | No rating given | Sunny | > 2 weeks | 1.57 (Poor) |



iparian zon

Not monitored spring 2013

4/13/2014; 10:30

11

Sunny

4/11/2014

2.14 (Fair)

4/19/2015; 10:45

20

Sunny

4/16/2015

1.86 (Poor)

Not monitored spring 2016

Not monitored in 2017

Not monitored in 2018

Note: it had rained two days before monitoring in spring 2014. Monitors report

STREAM HEALTH

Issues:

2009-2018:

The site has not been monitored since 2016, nor was it monitored during spring

Long-term:

Change in water quality might occur with more development

Average stream health score, 2012-2016:

1.86 (Poor) on a scale of 1.00-5.00, spring index period only

(using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

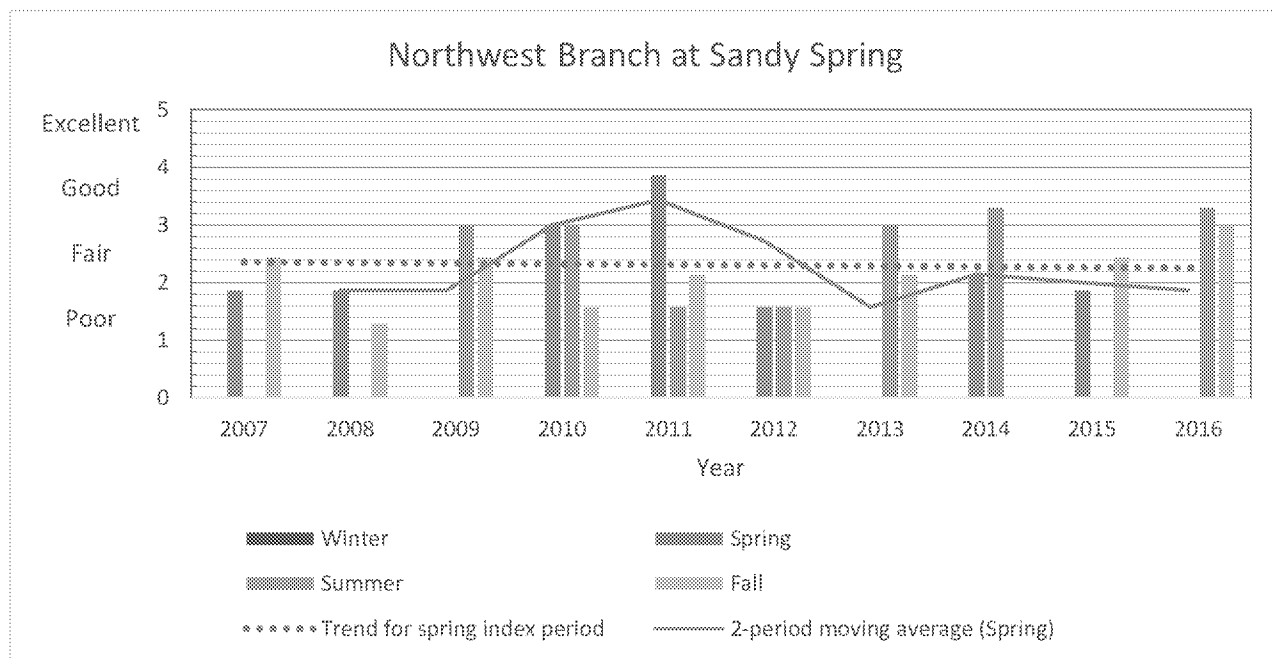


Table of BIBI Scores

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|--------|------|------|------|------|------|------|------|
| Winter | | | | | | | |

ed that

; 2013 and

.....

| | | | | | | | |
|---------------|------|------|------|------|------|------|------|
| Spring | 1.86 | 1.86 | | 3.00 | 3.86 | 1.57 | |
| Summer | | | 3.00 | 3.00 | 1.57 | 1.57 | 3.00 |
| Fall | 2.43 | 1.29 | 2.43 | 1.57 | 2.14 | 1.57 | 2.14 |

| Year | 2014 | 2015 | 2016 |
|---------------|-------------|-------------|-------------|
| Winter | | | |
| Spring | 2.14 | 1.86 | |
| Summer | 3.29 | | 3.29 |
| Fall | | 2.43 | 3.00 |

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 02120305

Sub-watershed: Paint Branch

Stream segment: Good Hope Tributary

Stream order: 2

Location: Upper Paint Branch Stream Valley Park
Just east of Hobbs Drive, Colesville, MD 20904
1/4 mile downstream of the ICC
Located between SHA's PBGH-DS/PB-113 and DEP's PBGH205A

Coordinates: 39.086654° N -76.987523° W

Site description: Broad floodplain with deciduous trees. Sewer manhole on left bank (looking

Distance from nearest road: 140 meters

Land use visible at the site: Deciduous forest, wetland

Width of riparian buffer
(looking downstream)

Left bank: Over 50 meters

Right Bank: Over 50 meters

TRASH RATINGS

Trash rating categories: 16-20 = Optimal: Little or no human refuse visible from the stream channel
11-15 = Suboptimal: Refuse present in minor amounts (yellow)
6-10 = Marginal: Refuse present in moderate amounts (orange)
0-5 = Poor: Refuse abundant and unsightly (red)

| Date/Time | Trash Rating | Weather |
|------------------|--------------|---------|
| 5/3/2011; 11:30 | 18 | Sunny |
| 5/27/2012; 15:30 | 17 | Sunny |
| 5/4/2013; 9:20 | 15 | Cloudy |
| 4/26/2014; 10:20 | 18 | Sunny |

g downstream).



I or riparian zone (green)

| <u>Last Rain</u> | <u>Stream Health</u> |
|------------------|----------------------|
|------------------|----------------------|

| | |
|-----------|-------------|
| 5/1/2011 | 3.57 (Good) |
| 5/23/2012 | 3.29 (Good) |
| N/A | 3.00 (Fair) |
| 4/25/2014 | 3.29 (Good) |

5/3/2015; 10:15
Not monitored, spring 2016

15

Sunny

5/7/2017; 9:30

19

Overcast

4/29/2018; 9:30

18

Overcast

STREAM HEALTH

Issues:

2011-2018: Relatively low pH: 6.4-6.7. Banks moderately unstable; moderate sediment
Long-term: Expected to remain relatively stable.

Average stream health
score, 2014-2018:

3.29 (Good) on a scale of 1.00-5.00 for the spring index period only
(using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

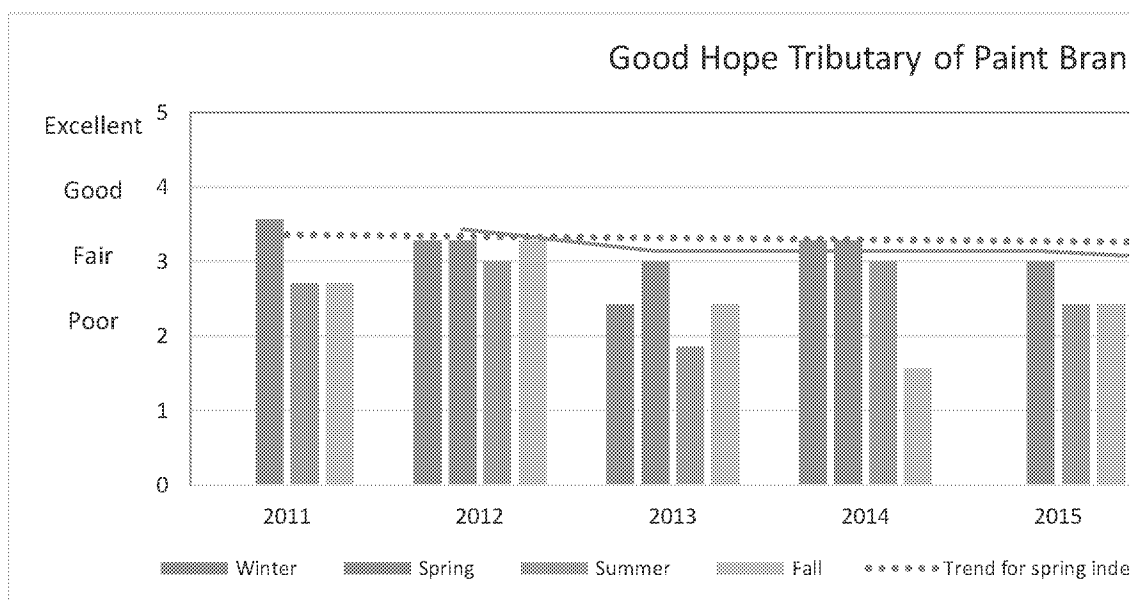


Table of BIBI Scores

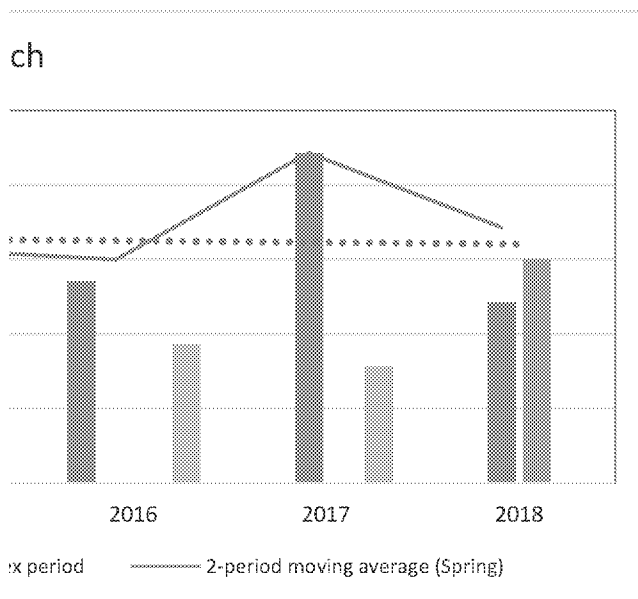
| Year | 2011 | 2012 |
|--------|------|------|
| Winter | | 3.29 |
| Spring | 3.57 | 3.29 |
| Summer | 2.71 | 3.00 |
| Fall | 2.71 | 3.29 |

N/A 3.00 (Fair)

5/6/2017 4.43 (Excellent)

4/27/2018 2.43 (Fair)

t deposition and bar formation;



| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------|------|------|------|------|------|
| 2.43 | 3.29 | | 2.71 | | |
| 3.00 | 3.29 | 3.00 | | 4.43 | 2.43 |
| 1.86 | 3.00 | 2.43 | | | 3.00 |
| 2.43 | 1.57 | 2.43 | 1.86 | 1.57 | |

Watershed: Anacostia (ANAC)
Maryland 8-digit code: 02120305

Sub-watershed: Sligo Creek

Stream segment: Mainstem

Stream order: 1

Location: Sligo Creek Stream Valley Park, Unit 4

Along Sligo Creek Parkway downstream of University Boulevard, Silver Spring, MD

Coordinates: 39.033983° N -77.029748° W

Site description: the course of the stream.

Distance from nearest road: 25 meters

Land use visible at the site: Deciduous forest

**Width of riparian buffer
(looking downstream)**

Left bank: 5 meters

Right bank: 15 meters



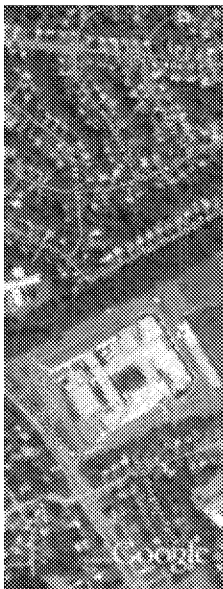
TRASH RATINGS

Trash rating categories:

- 16-20 = Optimal: Little or no human refuse visible from the stream channel or ripari
- 11-15 = Suboptimal: Refuse present in minor amounts (yellow)
- 6-10 = Marginal: Refuse present in moderate amounts (orange)
- 0-5 = Poor: Refuse abundant and unsightly (red)

| Date/Time | Trash Rating | Weather | Last Rain |
|------------------|------------------------|---------------|-----------|
| 4/20/2011; 18:00 | 15 | Partly cloudy | 4/16/2011 |
| 4/25/2012; 18:00 | Trash rating not given | | |
| 4/20/2013; 16:00 | 12 | Clear, breezy | 4/19/2013 |

20901



an zone (green)

Stream Health

- 1.57 (Poor)
- 1.00 (Poor)
- 1.00 (Poor)

4/25/2014; 18:15

Trash rating not given

4/25/2015: 14:00

18

Clear

4/21/2015

4/30/2016; 18:00

18

Cloudy

4/29/2016

4/27/2017; 18:45

10

Clear

4/26/2017

4/28/2018; 10:00

17

Clear

4/27/2018

STREAM HEALTH

Issues:

2009-2018:

storms, causing changes to the channel and erosion. PH of 7.8 was recorded in spring

Long-term:

No change expected

Average stream health
score, 2014-2018:

1.17 (Poor) on a scale of 1.00-5.00 for the spring index period only

(using the Maryland Stream Waders Benthic Index of Biotic Integrity)

Chart of BIBI Scores

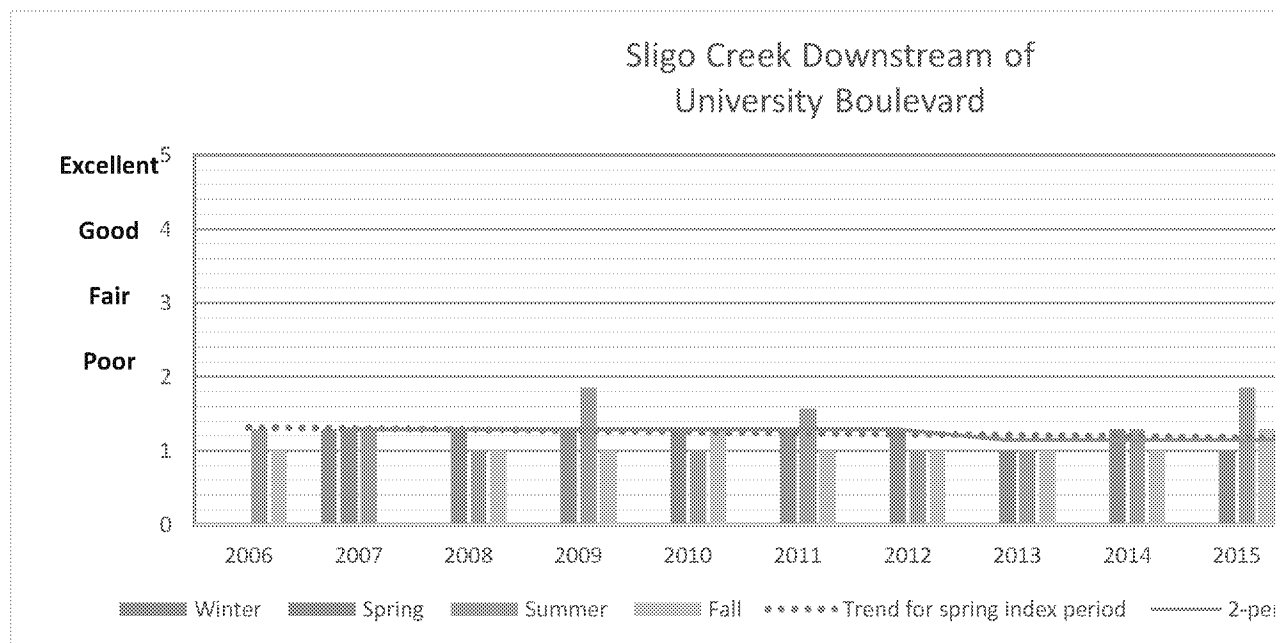
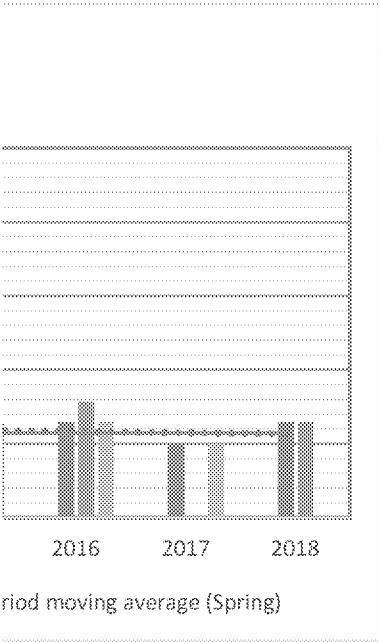


Table of BIBI Scores

| Year | 2006 | 2007 | 2008 |
|--------|------|------|------|
| Winter | | 1.29 | |
| Spring | | 1.29 | 1.29 |
| Summer | 1.29 | 1.29 | 1.00 |

1.29 (Poor)
1.00 (Poor)
1.29 (Poor)
1.00 (Poor)
1.29 (Poor)

ng and fall 2015, as well as fall 2016.



| 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|
|------|------|------|------|

| | | | |
|------|------|------|------|
| 1.29 | 1.29 | 1.29 | 1.29 |
| 1.86 | 1.00 | 1.57 | 1.00 |

| | | |
|------|------|------|
| Fall | 1.00 | 1.00 |
|------|------|------|

| Year | 2013 | 2014 | 2015 |
|--------|------|------|------|
| Winter | | | |
| Spring | 1.00 | 1.29 | 1.00 |
| Summer | 1.00 | 1.29 | 1.86 |
| Fall | 1.00 | 1.00 | 1.29 |

1.00 1.29 1.00 1.00

| 2016 | 2017 | 2018 |
|------|------|------|
|------|------|------|

| | | |
|------|------|------|
| 1.29 | 1.00 | 1.29 |
|------|------|------|

| | | |
|------|--|------|
| 1.57 | | 1.29 |
|------|--|------|

| | | |
|------|------|--|
| 1.29 | 1.00 | |
|------|------|--|